

WHAT IS CLAIMED IS:

1. An induction heating roller device comprising:
an induction coil;

5 a grounded heating roller magnetically coupled to the
induction coil and heated by electro-magnetic induction;

a power factor improving capacitor connected in
parallel to and near the induction coil and having a
grounded intermediate point; and

10 a high-frequency power source for biasing the induction
coil.

2. The induction heating roller device of claim 1,
wherein the power factor improving capacitor includes two
15 series-connected capacitors, wherein an intermediate point
between the capacitors is grounded.

3. The induction heating roller device of claim 1,
wherein the induction coil includes a first terminal and a
20 second terminal, and the power factor improving capacitor
includes a first capacitor connected between the first
terminal and the ground and a second capacitor connected
between the second terminal and the ground.

25 4. The induction heating roller device of claim 1,
further comprising a coil bobbin for winding the induction
coil, wherein the coil bobbin includes a recess for
accommodating the power factor improving capacitor.

30 5. The induction heating roller device of claim 1,
wherein the high-frequency power source is separated from
the induction coil.

6. An induction heating roller device comprising:
an induction coil;

a grounded heating roller magnetically coupled to the
induction coil and heated by electro-magnetic induction;

5 a power factor improving capacitor connected in
parallel to and near the induction coil and having a
grounded intermediate point;

a high-frequency power source for biasing the induction
coil;

10 a high-frequency transmission line connecting the high-
frequency power source and the induction coil; and

a matching circuit connected between the high-frequency
power source and the high-frequency transmission line and
located near the high-frequency power source.

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7. The induction heating roller device of claim 6,
wherein the power factor improving capacitor includes two
series-connected capacitors, wherein an intermediate point
between the capacitors is grounded.

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8. The induction heating roller device of claim 6,
wherein the induction coil includes a first terminal and a
second terminal, and the power factor improving capacitor
includes a first capacitor connected between the first
25 terminal and the ground and a second capacitor connected
between the second terminal and the ground.

9. The induction heating roller device of claim 6,
further comprising a coil bobbin for winding the induction
30 coil, wherein the coil bobbin includes a recess for
accommodating the power factor improving capacitor.

10. The induction heating roller device of claim 6,

wherein the high-frequency power source and the matching circuit are separated from the induction coil.

11. The induction heating roller device of claim 6,
5 wherein the high-frequency transmission line is arranged near the induction coil in the heating roller.

12. A fixing device for use with a recording medium bearing a toner image, the fixing device comprising:

10 a pressure roller; and

an induction heating roller device including a heating roller arranged in pressure contact with the pressure roller, wherein the heating roller transports the recording medium bearing a toner image by holding the recording medium
15 with the pressure roller and fixes the toner image on the recording medium, the induction heating roller device further including:

an induction coil;

a grounded heating roller magnetically coupled to
20 the induction coil and heated by electro-magnetic induction;

a power factor improving capacitor connected in parallel to and near the induction coil and having a grounded intermediate point; and

25 a high-frequency power source for biasing the induction coil.

13. A fixing device for use with a recording medium bearing a toner image, the fixing device comprising:

30 a pressure roller; and

an induction heating roller device including a heating roller arranged in pressure contact with the pressure roller, wherein the heating roller transports the recording

medium bearing a toner image by holding the recording medium with the pressure roller and fixes the toner image on the recording medium, the induction heating roller device further including:

5 an induction coil;

 a grounded heating roller magnetically coupled to the induction coil and heated by electro-magnetic induction;

10 a power factor improving capacitor connected in parallel to and near the induction coil and having a grounded intermediate point;

 a high-frequency power source for biasing the induction coil;

15 a high-frequency transmission line connecting the high-frequency power source and the induction coil; and

 a matching circuit connected between the high-frequency power source and the high-frequency transmission line and located near the high-frequency power source.

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14. An image forming apparatus for use with a recording medium, the image forming apparatus comprising:

 an image forming unit for forming a toner image on the recording medium;

25 a fixing device for transporting the recording medium bearing the toner image and fixing the toner image on the recording medium, the fixing device including:

 a pressure roller; and

30 an induction heating roller device including a heating roller arranged in pressure contact with the pressure roller, wherein the heating roller transports the recording medium bearing a toner image by holding the recording medium with the pressure roller and fixes

the toner image on the recording medium, the induction heating roller device further including:

an induction coil;

5 a grounded heating roller magnetically coupled to the induction coil and heated by electro-magnetic induction;

a power factor improving capacitor connected in parallel to and near the induction coil and having a grounded intermediate point; and

10 a high-frequency power source for biasing the induction coil.

15. An image forming apparatus for use with a recording medium, the image forming apparatus comprising:

15 an image forming unit for forming a toner image on the recording medium;

a fixing device for transporting the recording medium bearing the toner image and fixing the toner image on the recording medium, the fixing device including:

20 a pressure roller; and

an induction heating roller device including a heating roller arranged in pressure contact with the pressure roller, wherein the heating roller transports the recording medium bearing a toner image by holding
25 the recording medium with the pressure roller and fixes the toner image on the recording medium, the induction heating roller device further including:

an induction coil;

30 a grounded heating roller magnetically coupled to the induction coil and heated by electro-magnetic induction;

a power factor improving capacitor connected in parallel to and near the induction coil and

having a grounded intermediate point;

a high-frequency power source for biasing the induction coil;

5 a high-frequency transmission line connecting the high-frequency power source and the induction coil; and

a matching circuit connected between the high-frequency power source and the high-frequency transmission line and located near the high-
10 frequency power source.